33

What is Claimed is:

- 1. A structured liquid fabric treatment composition comprising as added components
 - (A) one or more silicone-based cationic fabric care ingredients;
 - (B) a structuring system comprising a structuring agent, a nonionic emulsifier and an anionic emulsifier;
 - (C) one or more cationic scavenging agents for said anionic emulsifier; and
 - (D) a liquid carrier.
- 2. A structured liquid fabric treatment composition according to Claim 1, wherein the silicone-based cationic fabric care ingredient is selected from the group consisting of cationic silicone polymers comprising one or more polysiloxane units and one or more quaternary nitrogen units, and mixtures thereof.
- 3. A structured liquid fabric treatment composition according to Claim 1, wherein the silicone-based cationic fabric care ingredient is present at a level of from about 0.1% to about 20% by weight of the composition.
- 4. A structured liquid fabric treatment composition according to Claim 3, wherein the silicone-based cationic fabric care ingredient is present at a level of from about 0.2% to about 2.5% by weight of the composition.
- 5. A structured liquid fabric treatment composition according to Claim 1, wherein said structuring system is present at a level of from about 0.1% to about 20% by weight of the composition, and wherein said structuring premix is present at a level of from at least 0.5%, by weight of the structuring system, of the anionic emulsifier.
- 6. A structured liquid fabric treatment composition according to Claim 5, wherein said structuring system is present at a level of from about 0.2% to about 5.0% by weight of the composition.
- 7. A structured liquid fabric treatment composition according to Claim 1, wherein said

cationic scavenging agent is present at a level of from about 0.1% to about 50% by weight of the composition.

- 8. A structured liquid fabric treatment composition according to Claim 7, wherein said cationic scavenging agent is present at a level of from about 0.2% to about 10% by weight of the composition.
- 9. A structured liquid fabric treatment composition according to Claim 1, wherein said liquid carrier is present at a level of from about 0.1% to about 98% by weight of the composition.
- 10. A structured liquid fabric treatment composition according to Claim 9, wherein said liquid carrier is present at a level of from about 25% to about 75% by weight of the composition.
- 11. A structured liquid fabric treatment composition according to Claim 2 wherein the cationic silicone polymer has the formula:

$$\left[\begin{array}{c} Z-X-CC_{a}H_{2a}\xrightarrow{b}R^{2}+\left(\begin{array}{c} R^{1}\\ SiO\\ R^{1} \end{array}\right)\left(\begin{array}{c} R^{1}\\ SiO\\ R^{3} \end{array}\right)\left(\begin{array}{c} R^{1}\\ Si\\ R^{3} \end{array}\right)\left(\begin{array}{c} R^{1}\\ Si\\ R^{1} \end{array}\right)-R^{2}\left(\begin{array}{c} C_{a}H_{2a}O\xrightarrow{b}X-Z \end{array}\right]^{n} \end{array}\right. \quad nA$$

wherein:

- R¹ is independently selected from the group consisting of C₁₋₂₂ alkyl, C₂₋₂₂ alkenyl, C₆₋₂₂ alkylaryl, aryl, cycloalkyl and mixtures thereof;
- R² is independently selected from the group consisting of divalent organic moieties;
- X is independently selected from the group consisting of ring-opened epoxides;
- ${\bf R}^{\bf 3}$ is independently selected from polyether groups having the formula:

$$-M1(CaH2aO)b-M2$$

wherein M^1 is a divalent hydrocarbon residue; M^2 is independently selected from the group consisting of H, C_{1-22} alkyl, C_{2-22} alkenyl,

C₆₋₂₂ alkylaryl, aryl; cycloalkyl, C₁₋₂₂ hydroxyalkyl, polyalkyleneoxide, (poly)alkoxy

alkyl, and mixtures thereof;

- Z is independently selected from the group consisting of monovalent organic moieties comprising at least one quaternized nitrogen atom;

- a is from about 2 to about 4; b is from 0 to about 100; c is from about 1 to about 1000; d is from 0 to about 100; n is the number of positive charges associated with the cationic silicone polymer, which is greater than or equal to about 2; and A is a monovalent anion;

12. A structured liquid fabric treatment composition according to Claim 11 wherein whereinZ is independently selected from the group consisting of:

(iii)
$$-\frac{{\stackrel{}_{l}}^{12}}{{\stackrel{}_{N}}^{14}} R^{16} - {\stackrel{}_{N}}^{16} - {\stackrel{}_{R}}^{18}$$
 (iv) $-{\stackrel{}_{N}} - {\stackrel{}_{C}} H_2 - {\stackrel{}_{C}}^{C} - O - R^{12}$

(v) monovalent aromatic or aliphatic heterocyclic group, substituted or unsubstituted, containing at least one quaternized nitrogen atom;

wherein:

- R^{12} , R^{13} , R^{14} are the same or different, and are selected from the group consisting of C_{1-22} alkyl, C_{2-22} alkenyl, C_{6-22} alkylaryl, aryl, cycloalkyl, C_{1-22} hydroxyalkyl; polyalkyleneoxide; (poly)alkoxy alkyl, and mixtures thereof;
- $-R^{15}$ is -O- or NR^{19} ;
- R¹⁶ is a divalent hydrocarbon residue;
- R^{17} , R^{18} , R^{19} are the same or different, and are selected from the group consisting of H, C_{1-22} alkyl, C_{2-22} alkenyl, C_{6-22} alkylaryl, aryl, cycloalkyl, C_{1-22} hydroxyalkyl; polyalkyleneoxide, (poly)alkoxy alkyl and mixtures thereof; and
- e is from about 1 to about 6.
- 13. A structured liquid fabric treatment composition according to Claim 2 wherein the cationic silicone polymer is composed of alternating units of:

(i) a polysiloxane of the following formula:

$$= \left[X - CC_aH_{2a} - CC_aH_$$

(ii) a divalent organic moiety comprising at least two quaternized nitrogen atoms; wherein:

- R^1 is independently selected from the group consisting of C_{1-22} alkyl, C_{2-22} alkenyl, C_{6-22} alkylaryl, aryl, cycloalkyl and mixtures thereof;
- R² is independently selected from the group consisting of divalent organic moieties;
- X is independently selected from the group consisting of ring-opened epoxides;
- R³ is independently selected from polyether groups having the formula:

$$-M^{1}(C_{a}H_{2a}O)_{b}-M^{2}$$

wherein M^1 is a divalent hydrocarbon residue; M^2 is independently selected from the group consisting of H, C_{1-22} alkyl, C_{2-22} alkenyl,

 C_{6-22} alkylaryl, aryl, cycloalkyl, C_{1-22} hydroxyalkyl, polyalkyleneoxide, (poly)alkoxy alkyl, and mixtures thereof;

- a is from about 2 to about 4; b is from 0 to about 100; c is from about 1 to about 1000; and d is from 0 to about 100.
- 14. A structured liquid fabric treatment composition according to Claim 2 wherein the cationic silicone polymer is composed of alternating units of:
 - (i) a polysiloxane of the following formula:

$$= \left[X - CC_aH_{2a} - C_aH_{2a} - C_aH_{2a} - C_aH_{2a}C - C_aH_{2a$$

; and

; and

(ii) a cationic divalent organic moiety selected from the group consisting of:

(a)
$$\begin{bmatrix} R^4 & R^6 \\ I \oplus \\ N - Z^1 - N \end{bmatrix}^{m} \xrightarrow{2mA} ;$$

$$\text{(c)} \quad \begin{array}{c|c} R^4 & R^6 & R^8 & R^{10} \\ \downarrow \oplus & \downarrow \oplus & \downarrow \oplus & \downarrow \oplus \\ N-Z^1-N-Z^2-N-Z^1-N \\ \downarrow S & R^7 & R^9 & R^{11} \end{array} \right]^m \quad {}^{4mA} \quad ; \\$$

- (d) a divalent aromatic or aliphatic heterocyclic group, substituted or unsubstituted, containing at least one quaternized nitrogent atom; and
- (iii) optionally, a polyalkyleneoxide of formula:

$$\left[Y-O\left(C_aH_{2a}O\right)Y\right]_{; and}$$

(iv) optionally, a cationic monovalent organic moiety, to be used as an end-group, selected from the group consisting of:

(i)—
$$N = \frac{R^{12}}{N} = R^{13}$$

(i)
$$R^{12}$$
 R^{12} (ii) R^{12} $CH_2 \rightarrow R^{15}$ R^{15} R^{12} $CH_2 \rightarrow R^{15}$ R^{12}

(iii)
$$-N = R^{12} \\ N = R^{16} \\ R^{16} \\ R^{18}$$

(iii)
$$-N = \frac{R^{12}}{N} = \frac{R^{16}}{R^{18}}$$
 (iv) $-N = \frac{N}{N} = \frac{O}{N} = C + O = R^{12}$

(v) monovalent aromatic or aliphatic heterocyclic group, substituted or unsubstituted, containing at least one quaternized nitrogen atom;

wherein:

- R⁴, R⁵, R⁶, R⁷, R⁸, R⁹, R¹⁰, R¹¹ are the same or different, and are selected from the group consisting of C₁₋₂₂ alkyl, C₂₋₂₂ alkenyl, C₆₋₂₂ alkylaryl, aryl, cycloalkyl, C₁₋₂₂ hydroxyalkyl; polyalkyleneoxide; (poly)alkoxy alkyl and mixtures thereof; or in which R⁴ and R⁶, or R⁵ and R⁷, or R⁸ and R¹⁰, or R⁹ and R¹¹ are components of a bridging alkylene group;

38

- R^{12} , R^{13} , R^{14} are the same or different, and are selected from the group consisting of C_{1-22} alkyl; C_{2-22} alkenyl; C_{6-22} alkylaryl; C_{1-22} hydroxyalkyl; polyalkyleneoxide; (poly)alkoxy alkyl groups and mixtures thereof; and
- R¹⁵ is -O- or NR¹⁹;
- R¹⁶ and M¹ are the same or different divalent hydrocarbon residues;
- R^{17} , R^{18} , R^{19} are the same or different, and are selected from the group consisting of H, C_{1-22} alkyl, C_{2-22} alkenyl, C_{6-22} alkylaryl, aryl, cycloalkyl, C_{1-22} hydroxyalkyl; polyalkyleneoxide, (poly)alkoxy alkyl, and mixtures thereof; and
- Z^1 and Z^2 are the same or different divalent hydrocarbon groups with at least 2 carbon atoms;
- Y is a secondary or tertiary amine;
- a is from about 2 to about 4; b is from 0 to about 100; c is from about 1 to about 1000; d is from 0 to about 100; e is from about 1 to about 6; m is the number of positive charges associated with the cationic divalent organic moiety, which is greater than or equal to about 2; and A is an anion.
- 15. A structured liquid fabric treatment composition according to Claim 2 wherein the cationic silicone polymer has the formula:

$$\begin{bmatrix} R^{1} & R^{1} & R^{1} & R^{1} \\ SiO & SiO & SiO & Si & R^{2} & C_{a}H_{2a}O_{3b} & X & W & X & COC_{a}H_{2a} & Si & OSi & R^{1} \\ R^{1} & R^{3} & R^{3} & R^{2} &$$

wherein:

- R^1 is independently selected from the group consisting of C_{1-22} alkyl; C_{2-22} alkenyl; C_{6-22} alkylaryl; aryl; cycloalkyl and mixtures thereof;
- R² is independently selected from the group consisting of divalent organic moieties;
- X is independently selected from the group consisting of ring-opened epoxides;
- R³ is independently selected from polyether groups having the formula:

$$-M^{1}(C_{a}H_{2a}O)_{b}-M^{2}$$

wherein M^1 is a divalent hydrocarbon residue; M^2 is independently selected from the group consisting of H, C_{1-22} alkyl, C_{2-22} alkenyl,

 C_{6-22} alkylaryl, aryl, cycloalkyl, C_{1-22} hydroxyalkyl, polyalkyleneoxide, (poly)alkoxy alkyl, and mixtures thereof;

- X is independently selected from the group consisting of ring-opened epoxides;

39

- W is independently selected from the group consisting of divalent organic moieties comprising at least one quaternized nitrogen atom;
- a is from about 2 to about 4; b is from 0 to about 100; c is from about 1 to about 1000; d is from 0 to about 100; n is the number of positive charges associated with the cationic silicone polymer, which is greater than or equal to about 1; and A is a suitable couterion;
- 16. A structured liquid fabric treatment composition according to Claim 15 wherein W is independently selected from the group consisting of:

$$(b) - N \underbrace{N - Z^{l} - N}_{R^{l} R^{l'}} N \underbrace{N}_{R^{m}}^{m} \xrightarrow{2mA} ;$$

(d) a divalent aromatic or aliphatic heterocyclic group, substituted or unsubstituted, containing at least one quaternized nitrogent atom; and

mixtures thereof;

- wherein R^4 , R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} are the same or different, and are selected from the group consisting of: C_{1-22} alkyl, C_{2-22} alkenyl, C_{6-22} alkylaryl, aryl, cycloalkyl, C_{1-22} hydroxyalkyl; polyalkyleneoxide; (poly)alkoxy alkyl, and mixtures thereof; or in which R^4 and R^6 , or R^5 and R^7 , or R^8 and R^{10} , or R^9 and R^{11} are components of a bridging alkylene group; and

- Z^1 and Z^2 are the same or different divalent hydrocarbon groups with at least about 2 carbon atoms.

17. A structured liquid fabric treatment composition according to Claim 1 wherein the structuring agent of said structuring system is selected from the group consisting of crystalline, hydroxyl-containing stabilizing agents; fatty acids, fatty esters or fatty soap water-insoluble wax-like substances, and mixtures thereof; and wherein the nonionic emulsifier is selected from the group consisting of alkoxylated nonionic emulsifiers, amidofunctional nonionic emulsifiers, condensation products of primary aliphatic alcohols with from about 1 to about 75 moles of C2-3 alkylene oxide, and from semi-polar emulsifiers having the formula:

$$R(EO)_x(PO)_y(BO)_zN(O)(CH_2R')_2$$

and mixtures thereof, wherein R is a saturated or unsaturated, linear or branched C_{8-20} hydrocarbyl moiety; R' is a C_{1-4} hydrocarbyl moiety; and x, y, z are each from 0 to about 100; EO is ethyleneoxy, PO is propyleneneoxy and BO is butyleneoxy, and wherein the anionic emulsifier of said structuring system is selected from the group consisting of C_{5-20} alkylbenzene sulfonates, C_{5-20} alkyl ester sulfonates, C_{6-22} primary or secondary alkane sulfonates, C_{5-20} sulfonated polycarboxylates, C_{5-20} alkylbenzene sulfonic acids, C_{5-20} alkyl ester sulfonic acids, C_{6-22} primary or secondary alkane sulfonic acids, C_{5-20} sulfonated polycarboxylates acids and mixtures thereof.

18. A structured liquid fabric treatment composition according to Claim 1 wherein the cationic scavenging agent a compound selected from the group consisting of compounds having the formula:

(1)
$$R^1R^2R^3R^4N^+X^-$$

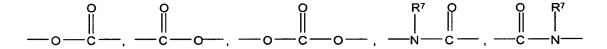
CM2695 41

(3)
$$\begin{bmatrix} & & & & & \\ & & & \\ & & & & \\ & & &$$

(4)
$$R^8 \longrightarrow N \longrightarrow R^{10}$$
 $R^9 \longrightarrow R^9$

(5) and mixtures thereof;

wherein R^1 is C_{8^-16} alkyl, each of R^2 , R^3 and R^4 is independently selected from the group consisting of C_{1^-4} alkyl; C_{1^-4} hydroxy alkyl; benzyl; $-(C_2H_4O)_xH$, where x is from about 2 to about 5, and mixtures thereof; wherein Q is a carbonyl unit having the formula:



 R^5 is independently selected from the group consisting of hydrogen, C_{1^-6} alkyl, C_{1^-6} hydroxyalkyl, and mixtures thereof; each R^6 is independently selected from the group consisting of linear or branched C_{11^-22} alkyl, linear or branched C_{11^-22} alkenyl, and mixtures thereof; R^7 is independently selected from the group consisting of hydrogen, C_{1^-4} alkyl, C_{1^-4} hydroxyalkyl, and mixtures thereof; the index m is from about 1 to about 4; the index n is from about 1 to about 4; wherein R^8 is an acyclic aliphatic C_{8^-22} hydrocarbon group; R^9 is a C_{1^-4} saturated alkyl or hydroxyalkyl group, R^{10} is selected from the group consisting of R^8 and R^9 groups; and mixtures thereof, and wherein X is a compatible anion, selected from the group consisting of halide, methosulfate, acetate, phosphate and mixtures thereof.

19. A structured liquid fabric treatment composition according to Claim 1 wherein in the structuring system component the weight ratio of the nonionic emulsifier to the anionic

- emulsifier is from about 9:1 to about 4:1.
- 20. A structured liquid fabric treatment composition according to Claim 1 wherein the weight ratio of the cationic scavenging agent to the anionic emulsifier is from about 5:1 to about 2.5:1.
- 21. A structured liquid fabric treatment composition according to Claim 1, wherein the liquid carrier is selected from the group consisting of water, one or more organic solvents and mixtures thereof.
- 22. A structured liquid fabric treatment composition according to Claim 1 further comprising one or more components selected from the group consisting of nonionic surfactants, zwitterionic surfactants, amphoteric surfactants, builders, perfumes, suds suppressors, enzymes, coupling agents, chelants and mixtures thereof.
- Use of a structured liquid fabric treatment composition of Claim 1 to impart on a fabric substrate a fabric care benefit, wherein said benefit is selected from the group consisting of fabric cleaning benefit, reduction of wrinkles benefit, prevention of wrinkles benefit, surrender of fabric feel benefit, shape retention benefit, shape recovery benefit, fabric elasticity benefit, ease of ironing benefit, perfume benefit, fabric softening benefit, color benefit, and mixtures thereof.
- 24. Method of using a structured liquid fabric treatment composition according to Claim 1 for treating fabric by contacting said structured liquid fabric treatment composition with said fabric.
- 25. Process for preparing a structured liquid fabric treatment composition according to Claim 1 comprising the steps of:
 - (i) premixing the fabric care ingredient with the liquid carrier, optionally in the presence of the cationic scavenging agent;
 - (ii) premixing the structuring system, optionally in the presence of a liquid carrier;
 - (iii) optionally, if present, preparing a mixture of all other components; optionally in the presence of the cationic scavenging agent; and
 - (iv) combining all said premixes,

CM2695 43

wherein the cationic scavenging agent is added either to the fabric care premix or to the other component mixture or a combination thereof.